Name: Sophia

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**Investigating Optics**

Use the Optics for kids website to answer the questions in **complete sentences**.

<http://www.opticalres.com/kidoptx.html>

1. Light is a kind of energy called what?

Light is a kind of energy called electromagnetic radiation.

1. Name three other kinds of EM radiation.

The three other kinds of electromagnetic radiation radio waves, microwaves, and x-rays.

1. How is light different?

Light is different because we can see it.

1. How fast does light travel?

Light travels as fast as 186, 000miles per second.

1. What are the straight paths of light called?

The straight paths of light is called Light Rays.

1. In what three ways can light be controlled?

The three ways that light can be controlled are blocking it, reflecting it, and bending it.

1. Define refraction.
2. List 5 things that control light.

The five things that control light are

1. What do all lenses do?

All lenses bend light in useful ways.

1. Describe the difference between convex and concave lenses.

The difference between convex and concave lenses are that convex lenses are converge and conv

1. What are complex lenses and why are they used?

Complex lenses are used for focusing light from an image.

1. Give an example of a device that uses a complex lens.
2. What type of lens is a magnifying glass?
3. Describe how a magnifying glass makes an object look larger.

**Refraction of Light Demonstration**

[http://www.control.co.kr/java1/RefractionofLight/LightRefract.html](http://www.physics.uoguelph.ca/applets/Intro_physics/refraction/LightRefract.html)

In this interactive demonstration, you have control over the following variables: incident angle, medium (material), and incident wavelength.

By experimenting, answer the following questions.

1. At what angle does no refraction occur?
2. What does it mean if there is a very large difference between the incident angle and the reflected angle?
3. What medium (in this demonstration) refracts light the most?
4. What medium (in this demonstration) refracts light the least?
5. Describe, using complete sentences, what happens when light passes from air into another medium